

field, constitute the raw material for research in classification. The Curator and assistants mount them, label them with locality, date, collector's name, etc., sort them down to families, and prepare them for shipping out to specialists in the various groups.

To work out completely the systematic relationships of the species and genera in a given family, these specialists, ideally, need material from every region. Unlike that of the higher vertebrates, the classification of insects, for example, is still to a considerable degree in a tentative stage, with gaps in the picture slowly being filled in as new workers attack existing collections and as collectors in many parts of the world add new material to the stores in central gathering and distributing points (museums). Our insect department is in effect a huge "mail order house"; its millions of specimens are the stock out of which specialists' "orders" are filled and shipped. In a specialist's hands our specimens become part of an array of material from various sources, to be examined, compared, named, and cited in technical papers. The worker may keep some duplicates, but will upon completion of a project return our specimens, authoritatively identified, often with "interest" in the form of named specimens from other collections. Dead bugs thus take on value through the processing of science, until they reach their maximum worth as units in a great reference collection.

To be of greatest use to the most scientists, and so speed the advance of knowledge, an institution like ours must seize every opportunity to broaden the scope of its collections, within limits imposed by space, funds, and personnel. Of course no one museum can possibly house and handle specimens of everything from everywhere. Each becomes through collections and publications chief contributor to total knowledge of its own region, and perhaps also leader in world comprehension of one or more particular groups. For example, the California Academy of Sciences has the largest collection of western North American insects, and the most complete collections of birds, reptiles, plants, and insects of the Galápagos Islands. Looking at it from the other angle, this Academy is the only institution in western North America where an insect collection of increasingly world-wide scope is available to workers of our own region; moreover, we lead the world in certain special groups because our own workers have adopted them as specialties.

Getting back to our belabored Curator, his big problem is how to maintain this position and absorb his department's tremendous yearly growth with the space and means at his disposal. Oh, yes, he manages to do some research work in his own specialties—it fills up the long evenings at home.

APPLICATIONS FOR MEMBERSHIP

NOTICE is hereby given to all Corporate Members that the Council at its August meeting approved the applications of Mr. W. Warren Anderson, Mr. William Allen Garrison, Mr. William Henry General, Mr. Charles W. Hildebrand, Mrs. Harriet Fuchsia Lewis, Mr. J. H. McEachern, and Mr. Arthur L. Todt for REGULAR MEMBERSHIP, and of Falene Fink, Craig Jakobsen, Bert MacDonald, Gerald Oldknow, Charles Gonzalo Trimbach, and Art Twain for STUDENT MEMBERSHIP in the California Academy of Sciences. If no objection to the election of these applicants be received at the office of the Academy within two weeks after August 15, they will be considered elected.

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Cut courtesy Standard Oil Company of California

FINNY FISHERMAN FROM HAWAII

Robert P. Dempster, Steinhart Aquarium biologist, shows Chief Mate Vern Haselton of the Standard Oil tanker *F. S. Bryant* a frog fish which has a lure in its forehead to attract live food.

(See page 2)

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August Announcement

THE REGULAR AUGUST MEETING of the California Academy of Sciences will be held in the Steinhart Aquarium, Golden Gate Park, on Wednesday evening, August 17, at 8 o'clock. Mr. Robert P. Dempster, Biologist in the Steinhart Aquarium, will give an illustrated talk entitled

SALT WATER BEAUTIES OF HAWAII

What it takes to run an aquarium is plenty of fish. What appeals most to aquarium visitors—1,074,608 people entered our Steinhart Aquarium in 1948—is brightly colored tropical fish. Unfortunately, most tropical fish will not reproduce in captivity, nor do they live more than a very few years at best.

World War II cut our principal supply line for these favorite fish, which was steamer service from Hawaii. During the several years after Pearl Harbor the beautiful captives from Hawaiian reefs gradually faded in our tanks and died; all of them went the way of ephemeral things. Now with peace, such as it is, it became necessary to reestablish the supply line. This our President, M. E. Lombardi, was able to engineer through the generous good will of the Standard Oil Company of California, whose Marine Department installed four 73-gallon tanks in the tanker *F. S. Bryant* for the express purpose of keeping the Steinhart Aquarium regularly supplied with new fish from the Hawaiian Islands.

The job the Academy and Aquarium directors assigned Mr. Dempster was that of collecting the first shipment of fish, nursemaiding them home, and, while, in the Islands, arranging for the future shipments. First and last of these were accomplished through the wholehearted coöperation and good work of Mr. Spencer Tinker, Director of the Honolulu Aquarium, where fish were and will be gathered and kept pending shipment.

All of this and much more make the interesting story Robert P. Dempster will tell of his recent tanker voyage to the Islands and return with 467 fish. Not only a behind-the-scenes account of the way in which the Aquarium accomplishes its most important task, his talk will describe postwar Oahu as seen by a mainland visitor armed with curiosity and kodachrome.

The public is cordially invited.

WHAT MAKES MUSEUMS TICK?

WITH THE BIGGEST JOB of exhibits preparation in all its history facing the Academy, the Director, Dr. R. C. Miller, sent the Preparator of Exhibits, Mr. Cecil Tose, on a tour of this country's leading science and art museums to learn first-hand how other institutions are coping with and often creating new trends.

Stops on Mr. Tose's transcontinental trip of one month, early this summer, included Denver, Washington, D.C., Philadelphia, New York, New Haven, Rochester, Buffalo, Pittsburgh, Bloomfield Hills, Dearborn, Chicago, Milwaukee, Minneapolis, Seattle, and Portland. Altogether he visited and talked with directors and staffs of twenty-five museums and four planetariums. While in Chicago he attended the convention of the American Association of Museums, May 19-20.

From these institutions Mr. Tose brought back many interesting ideas as well as a broadened view of the museum field as a whole in its relation to the public it serves. He found museum directors and preparators generally giving much thought to the presentation of their exhibits, the design of rooms, and even to the flow of traffic through rooms and halls. An important phase of modern museum planning is the indirect control of this flow by means of a logically progressive or consecutive arrangement of exhibits—an obvious advance over older static and often confusing "blocks" of cases and objects. Other modern developments are improved teaching exhibits, sometimes in tabloid form; concentration on essential or typical examples and elimination of large series of like objects; use of graphic supplements—photographs, charts, drawings, and concise, simple explanatory captions and directing devices; and, in general, integration of all elements relating to a particular idea, with a view to teaching principles rather than random facts. Most of the museums are making greater use of techniques long practiced in advertising display: lighting, color, spacing, grouping, background, and so on.

Mr. Tose returned from his tour with the conviction that museums are more alive than ever to their responsibilities toward their public, doing a better job of teaching, improving tastes, and raising standards of value.

Construction is progressing rapidly on the Academy's new Hall of Science and the Morrison Planetarium. The Director and the Preparator of Exhibits are going ahead with long-range plans for the new exhibits to fill these halls and for the improvement of our older exhibits.

MOUNTING MOUNTAIN OF UNMOUNTED BUGS

ENTOMOLOGY's ever mounting insect mounting problem mounted to new heights last week with the arrival of a second crate of specimens, probably at least 25,000, from its expedition in West Africa. Pinned down by the task of getting pinned up some 300,000 insects from the Dawn Redwood expedition in China, the 1948 Mexico expedition, and the Truk expedition (a U. S. Government undertaking, the specimens from which are to be handled by the Academy)—not to mention many recently arrived smaller lots—the Curator, Dr. E. S. Ross, was struggling valiantly, just before the latest influx, against the annual summer expedition fever.

"If I could only figure out some way to have an expedition without adding to this hopeless pile of work," Dr. Ross was heard to mutter as he resignedly folded up a road map and began filling out a requisition for another half million pins. The African shipment had him licked.

The Curator was apparently caught in a paradox, yet specimen-producing expeditions enable our Entomology Department to fulfill its function as a supply base for systematic entomologists. All these vast unmounted, unsorted lots of insect specimens, together with all possible accompanying data concerning exact locality, time of year, biology if known, and any other pertinent facts noted by the man in the